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nection between text and music will be worked out, looking toward a fuller expression of thought and emotion. Melodies will be studied as material for work in pitch, rhythm and sight-reading. There will be suggestive talks upon the relation of singing to speech, science-work, history, and literature, geography, and physical culture; also, upon folk-songs.

The subject of choice of songs will be discussed throughout the course. The classical type, the sentimental, and the Froebelian will be discussed, and the marks of a good or bad song will be shown, with illustrations.

I. Breathing: Exercises for developing diaphragm control and strength. Exhalation on vowel sounds.

II. Speech: Exercises for evolving a singing tone from speech. Drill upon pure vowel coloring and consonants.

III. Tone Production: Poise, attack, physiological succession of the vowels in their relation to voice development. Balance between registers.

IV. Studies: Sight-reading and interval-drill by means of melodic studies developed from known songs. Scale work—major, minor, chromatic.

V. Song Study: Rhythm; attack; meaning and relation of text and tune.

VI. Historical Development: Expression of religious feeling; relation to national life, to rhythmic movement. Effect of environment upon musical expression; songs of the mountains, sailor songs, wanderer's songs, trade songs, lullabies, marching songs. Correlation of music, elocution, science, literature, and history.

LIST OF SONGS RECOMMENDED FOR STUDY.

Children's Songs, by Reinecke, Rheinberger, Schumann, Brahms, Elliott, Gilchrist, Eleanor Smith.

Folk-Songs: Collection of Irish Songs, Villiers Stanford; *Pan Pipes* (Old English); *Ausländische Liederschatz* (Peters' Edition); *Internationales Volksliederbuch*, Reimann; *Songs of Life and Nature*, Eleanor Smith; *Historical Specimens*, Vol. K, Curwen; *National Music*, Carl Engel.

NOTE.—The songs published in the July COURSE OF STUDY will be used in these classes. It is suggested that those who intend taking this course should familiarize themselves with the text of the songs.

Round Table Meetings

Held by the Heads of Departments

As announced on the program, every afternoon, from 3:30 to 4:10, will be devoted to round table meetings in which the heads of departments will discuss questions relating to their particular subjects. Col. Parker's outlines, considering arithmetic as a study in measuring quantity, and Mrs. Washburne's, relating the work of the home and the school, belong to this course and are given below:

A Study in Measuring Quantity

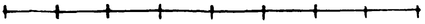
Francis W. Parker

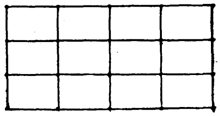
I. The function of Arithmetic is to measure quantity.

(a) Space and magnitude are measured

1. By length or distance. Feet, yards, miles, etc.

2. By areas, length and breadth, square inches, square yards, acres, etc.





3. By volume, length, breadth, and thickness. (b) Bulk is measured by pecks, bushels, etc. (c) Gravitation or weight is measured by pounds, tons, etc. (Scales.) (d) Force is measured by horse power, pounds of steam, volts and amperes of electricity, etc. (e) Time is measured by minutes, hours, centuries, etc. (Face of clock.) (f) Equivalents in value are measured by cents, dollars, francs, marks, pounds, etc. (g) Single things like trees, houses, men, beasts, may be measured by ones or any unit of ones.

II. Division of quantity.

Operations by which number may be used to measure quantity. (These definitions and explanations are considered entirely from the standpoint of measuring quantity, and not from any definition of number itself. Abstract number is not here discussed.)

(a) A quantity may be divided into equal quantities.

NOTE.—The student is requested to use quantities of various kinds and divide them into equal quantities without using written figures.

1. *Division* consists in dividing a quantity into a number of equal quantities, in order to find the *number* of equal quantities in that quantity.

NOTE.—The word *separation* should not be used, as it signifies a physical act. Division is a mental operation.

2. The divisor is one of the equal quantities into which the dividend is to be divided. //// //// //// Question: How many fours of marks are there in twelve marks?

3. The quotient is the number of equal quantities into which a quantity is divided.

Dividend { .... { What is the divisor?
{ .... { What is the quotient?

NOTE.—Illustrate this by many problems in division. Conventional form $12 \div 4 = 3$.

Question: Which is the larger *quantity*, the dividend as a quantity or the quotient as a quantity?

You have twelve apples. Divide them into three fours of apples. Which is the larger quantity, twelve apples or three fours of apples?

(b) The *partition* consists in parting or dividing a quantity into equal parts, in order to find the quantity *in one part*.

.... Partend.

1. The partend is a quantity to be divided into equal parts.

2. The divisor is the number of quantities into which the partend is to be divided.

(.... .... into thirds.)

3. The quotient is the quantity in one of the equal parts of a quantity. .... Conventional form, $\frac{1}{3}$ of $12 = 4$, quotient.

(c) Division and partition compared.

1. In division, the dividend is the quantity to be divided *into equal parts*.

2. In partition, the partend is the quantity to be divided *into equal parts*.

3. In division, the divisor is *one of the equal quantities* into which a quantity is to be divided.

4. In partition, the divisor is the *number of equal quantities* into which a quantity is to be parted.

5. In division, the quotient (considered as a definite quantity) *is the number of equal quantities in a quantity*.

6. In partition, the quotient is *the quantity of which one equal part of the quantity divided consists*.

NOTE.—Students may understand the *abstract* definitions of number, and the fundamental operations when they study higher mathematics in the university. They do not understand them in the elementary school. Hence the confusion, haziness and mystery concerning number. All children are able to measure quantities and may fully understand the operations.

(d) Subtraction is the division of a quantity into two quantities, one of which is known.

1. The minuend is a quantity to be divided into two quantities.

2. The subtrahend is the known quantity.

3. The remainder is the quantity found after division.

Conclusion: A quantity may be divided into equal quantities, equal parts, into two quantities, equal or unequal.

III. Uniting quantities.

Multiplication is the uniting of equal quantities.

1. The multiplicand is one of the equal quantities to be united.

2. The multiplier is the number of equal quantities to be united.

3. The product is the equal quantities united.

NOTE.—Division is dividing a quantity into a number of equal quantities. Multiplication is uniting a number of equal quantities.

NOTE.—"Division is dividing" is an awkward expression, but there is no word to take the place of "dividing."

(e) Addition is uniting a number of quantities, equal or unequal.

1. The addenda are the quantities to be united.

2. The sum is the quantities united.

Conclusion: Quantities may be united.

NOTE.—Children may discover all these definitions of the fundamental operations and thoroughly comprehend them. Oftentimes, adults who look through memorized definitions have difficulty in understanding that which can be understood only by studying without prejudice the function of number in measuring.

Relations of Home and School

A Series of Round Tables for Parents

MARION FOSTER WASHBURNE

I. Training the Body.—Physical training; corrective gymnastics; nutrition; sanitation; ventilation; habitual attitudes; clothing; rhythm of fatigue; laws of growth. How shall the child be brought to care for his own body, without anxiety or self-consciousness?

II. Training the Mind.—What knowledge is worth while? Why? The doctrine of interest. The place of drill. The central subjects of study—nature-study, geography, and history—as mind-nutrition. Relations of the body and the mind; manual training; home occupations. Expression: its reaction upon thought; reading and writing; clay modeling, painting, drawing, singing, oral reading. The effect of home training upon expression.

III. Training the Will.—Freedom essential to the right development of the will. Power of resistance; of initiative; of endurance. The desire to make, to express, to know, to help. The value of right motive. The use of happiness. The question of punishments and rewards. Discipline: shall subjects be studied merely as mental discipline? Order: What is true order? Respect for the rights of others.

IV. The Whole Child.—Under what ideal can the child develop best in all these directions? Character-building versus knowledge-getting. The demand made by community-life. The doctrine of immediate use. Altruism as an evolutionary force.

The Department of Applied Pedagogy

Flora J. Cooke

It will be observed that each department of this school presents and emphasizes the pedagogy of its own subject in the COURSE OF STUDY, and it might be inferred that a special department of applied pedagogy would be superfluous.

It finds its justification in the fact that the grades are the laboratories of the departments, wherein each head of a department tests the value of his ideas and feels the full responsibility for the results. He can judge of the value of his ideas only when he knows how the work was executed, how the children reacted to the stimuli presented, and how the plan was modified or adapted, according to the interests and experience of the children; and for this knowledge he must depend to a large extent upon the reports of the teachers who are in daily contact with the children.

Therefore, in order that each grade teacher might have the intelligent co-operation and criticism of her co-workers, the president of the school has for many years required his grade teachers to outline their work for each month. This is the work which will appear in the Chicago Institute COURSE OF STUDY during the ensuing year under the head of Applied Pedagogy.

The department proposes each month:

1. To show how the course of study for each grade is made, *i. e.*, what guides and determines the work for each particular class of children. In the outline the teacher will show whether she fully understands and appreciates the work suggested by each department of the school, and how far her children receive the benefit of the judgment and experience of the entire faculty.

2. To illustrate the method of each teacher in studying the interests, experience, and stages of development of the children under her supervision as manifested in their voluntary activities, and to show how the recognition of their fundamental activities and interests is the basis for the selection of work in every grade.

3. To present a detailed outline of work in each subject studied during the month—in geography, nature-work or science, history, literature, music, and in such fundamental social activities as sewing, cooking, gardening, and all forms of physical or manual training. The parents are requested to aid the teachers